SEQUENCE LISTING

<110> Fader, Gary M
Famodu, Omolayo O.
Huang, Lisa
McGonigle, Brian
Silva, Alexandre da
Tao, Yong

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Lys Ala Cys Val Arg Ala Lys Gly Val Lys Arg Val Ile Leu Thr Ser
35 40 45

Ser Ala Ala Ala Val Thr Ile Asn Gln Leu Lys Gly Thr Asp Leu Val
50 55 60

Met Asp Glu Ser Asn Trp Thr Asp Val Glu Tyr Leu Ser Thr Ala Lys
65 70 75 80

Pro Pro Thr Trp Gly Tyr Pro Ala Ser Lys Ala Leu Ala Glu Lys Ala

85 90 95

Ala Trp Lys Phe Ala Glu Glu Asn His Ile Asp Leu Ile Thr Val Ile
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Pro Thr Leu Thr Thr Gly Pro Ser Val Thr Thr Arg His Pro Asn Lys
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Cys Trp His Gly Asn Val Pro Gln Asn Arg Gln
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20 25 30

Arg Ala Thr Val Leu Asp Pro Ala Asp Met Arg Glu Val Lys His Leu
35 40 45

Leu Asp Leu Pro Gly Ala Glu Ser Lys Leu Ser Leu Trp Lys Ala Glu
50 55 60

Leu Thr Glu Glu Gly Ser Phe Asp Glu Ala Ile Lys Gly Cys Thr Gly

65 70 75 80

Val Phe His Leu Ala Thr Pro Val Asp Phe Lys Ser Lys Asp Pro Glu
85 90 95

Asn Glu Met Ile Lys Pro Thr Ile Gln Gly Val Leu Asn Ile Met Lys
100 105 110

Ala Cys Leu Lys Ala Lys Thr Val Arg Arg Leu Val Phe Thr Ser Ser
115 120 125

Ala Gly Thr Thr Asn Ile Thr Glu His Gln Lys Pro Ile Ile Asp Glu
130 135 140

Thr Cys Trp Thr Asp Val Glu Phe Cys Arg Arg Leu Asn Met Thr Gly
145 150 155 160

Trp Met Tyr Phe Val Ser Lys Thr Leu Ala Glu Lys Glu Ala Trp Lys
165 170 175

Phe Ala Lys Glu His Gly Met Asp Phe Ile Ala Ile Leu Pro Ala Leu
180 185 190

Val Ile Gly Pro Phe Leu Leu Pro Thr Met Pro Ser Ser Val Ile Ser
195 200 205

Ala Leu Ser Pro Ile Asn Gly Ile Glu Ala His Tyr Ser Ile Ile Lys
210 215 220

Gln Ala Gln Phe Val His Ile Glu Asp Ile Cys Leu Ala His Ile Phe
225 230 235 240

Leu Phe Glu Gln Pro Lys Ala Glu Gly Arg Tyr Ile Cys Ser Ala Cys
245 250 255

Asp Val Thr Ile His Asp Ile Val Lys Leu Ile Asn Glu Lys Tyr Pro
260 265 270

Glu Tyr Lys Val Pro Thr Lys Phe Gln Asn Ile Pro Asp Gln Leu Glu
275 280 285

Pro Val Arg Phe Ser Ser Lys Lys Ile Thr Asp Leu Gly Phe Gln Phe
290 295 300

Lys Tyr Ser Leu Glu Asp Met Tyr Thr Gly Ala Ile Asp Thr Cys Ile
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Glu His Lys

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Ile Gly Ser Trp Leu Val Met Arg Leu Ile Glu Arg Gly Tyr Thr Val
             20                  25                  30

Arg Ala Thr Val Leu Asp Pro Ala Asp Met Arg Glu Val Lys His Leu
          35                  40                  45

Leu Asp Leu Pro Gly Ala Glu Ser Lys Leu Ser Leu Trp Lys Ala Glu
      50                  55                  60

Leu Thr Glu Glu Gly Ser Phe Asp Glu Ala Ile Lys Gly Cys Thr Gly
 65                  70                  75                  80

Val Phe His Leu Ala Thr Pro Val Asp Phe Lys Ser Lys Asp Pro Glu
                 85                  90                  95

Asn Glu Met Ile Lys Pro Thr Ile Gln Gly Val Leu Asn Ile Met Lys
            100                 105                 110

Ala Cys Leu Lys Ala Lys Thr Val Arg Arg Leu Val Phe Thr Ser Ser
        115                 120                 125

Ala Gly Thr Thr Asn Ile Thr Glu His Gln Lys Pro Ile Ile Asp Glu
    130                 135                 140

Thr Cys Trp Thr Asp Val Glu Phe Cys Arg Arg Leu Asn Met Thr Gly
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Trp Met Tyr Phe Val Ser Lys Thr Leu Ala Glu Lys Glu Ala Trp Lys
                165                 170                 175

Phe Ala Lys Glu His Gly Met Asp Phe Ile Ala Ile Leu Pro Ala Leu
            180                 185                 190

Val Ile Gly Pro Phe Leu Leu Pro Thr Ile Pro Ser Ser Val Ile Ser
        195                 200                 205

Ala Leu Ser Pro Ile Asn Gly Ile Glu Ala His Tyr Ser Ile Ile Lys
    210                 215                 220

Gln Ala Gln Phe Val His Ile Glu Asp Ile Cys Leu Ala His Ile Phe
225                 230                 235                 240

Leu Phe Glu Gln Pro Lys Ala Glu Gly Arg Tyr Ile Cys Ser Ala Cys
                245                 250                 255

Asp Val Thr Ile His Asp Ile Val Lys Leu Ile Asn Glu Lys Tyr Pro
            260                 265                 270

Glu Tyr Lys Val Pro Thr Lys Phe Gln Asn Ile Pro Asp Gln Leu Glu
        275                 280                 285

Pro Val Arg Phe Ser Ser Lys Lys Ile Thr Asp Leu Gly Phe Gln Phe
    290                 295                 300

Lys Tyr Ser Leu Glu Asp Met Tyr Thr Gly Ala Ile Asp Thr Cys Ile
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Glu Lys Gly Leu Leu Pro Lys Pro Ala Glu Ile Pro Ala Asn Gly Ile
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Glu His Lys
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             20                  25                  30

Lys Ala Cys Val Arg Ala Lys Gly Val Lys Arg Val Ile Leu Thr Ser
         35                  40                  45

Ser Ala Ala Ala Val Thr Ile Asn Gln Leu Lys Gly Thr Asp Leu Val
     50                  55                  60

Met Asp Glu Ser Asn Trp Thr Asp Val Glu Tyr Leu Ser Thr Ala Lys
 65                  70                  75                  80

Pro Pro Thr Trp Gly Tyr Pro Ala Ser Lys Ala Leu Ala Glu Lys Ala
                 85                  90                  95

Ala Trp Lys Phe Ala Glu Glu Asn His Ile Asp Leu Ile Thr Val Ile
            100                 105                 110

Pro Thr Leu Thr Thr Gly Pro Ser Val Thr Thr Asp Ile Pro Ser Ser
        115                 120                 125

Val Gly Met Ala Ala Ser Leu Ile Thr Gly Asn Asp Phe Leu Ile Asn
    130                 135                 140

Ala Leu Lys Gly Met Gln Leu Leu Ser Gly Ser Ile Ser Ile Thr His
145                 150                 155                 160

Val Glu Asp Ile Cys Arg Ala Gln Ile Phe Val Ala Glu Lys Glu Ser
                165                 170                 175

Ala Ser Gly Arg Tyr Ile Cys Cys Ala His Asn Thr Ser Val Pro Glu
            180                 185                 190

Leu Ala Lys Phe Leu Ser Lys Arg Tyr Pro Gln Tyr Lys Ile Pro Thr
        195                 200                 205

Glu Phe Asp Asp Cys Pro Ser Lys Ala Lys Leu Ile Ile Ser Ser Glu
    210                 215                 220

Lys Leu Val Lys Glu Gly Phe Ser Phe Lys Tyr Gly Ile Glu Glu Ile
225                 230                 235                 240

Tyr Asp Gln Thr Leu Glu Tyr Leu Lys Ser Lys Gly Ala Leu Asn Asn
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Phe Val Ala Ser Trp Leu Val Lys Arg Leu Leu Glu Ser Gly Tyr His
20 25 30

Val Leu Gly Thr Val Arg Asp Pro Gly Asn Gln Lys Lys Val Ala His
35 40 45

Leu Trp Asn Leu Ala Gly Ala Lys Glu Gly Leu Glu Leu Val Arg Ala
50 55 60

Asp Leu Leu Glu Glu Gly Ser Phe Asp Asp Ala Val Met Ala Cys Glu
65 70 75 80

Gly Val Phe His Thr Ala Ser Pro Ile Ile Thr Asn Ala Asp Ser Lys
85 90 95

Glu Glu Met Leu Asp Ser Ala Ile Asn Gly Thr Leu Asn Val Leu Arg
100 105 110

Ser Cys Lys Lys Asn Pro Phe Leu Lys Arg Val Val Leu Thr Ser Ser
115 120 125

Ser Ser Thr Met Arg Leu Arg Asp Glu Ala Glu Phe Pro Pro Asn Val
130 135 140

Leu Leu Asp Glu Thr Ser Trp Ser Ser Val Glu Phe Cys Glu Ser Ile
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Gln Ile Trp Tyr Ala Val Ala Lys Ile Leu Ala Glu Lys Xaa Xaa Leu
165 170 175

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      50                  55                  60

Leu Ser Glu Glu Gly Ser Phe Asp Asp Ala Ile Ala Gly Cys Thr Gly
 65                  70                  75                  80

Val Phe His Val Ala Thr Pro Met Asp Phe Asp Ser Gln Asp Pro Glu
                 85                  90                  95

Asn Glu Val Ile Lys Pro Thr Val Glu Gly Met Leu Ser Ile Met Arg
            100                 105                 110

Ala Cys Lys Glu Ala Gly Thr Val Lys Arg Ile Val Phe Thr Ser Ser
        115                 120                 125

Ala Gly Ser Val Asn Ile Glu Glu Arg Gln Arg Pro Ala Tyr Asp Gln
    130                 135                 140

Asp Asn Trp Ser Asp Ile Asp Phe Cys Arg Arg Val Lys Met Thr Gly
145                 150                 155                 160

Trp Met Tyr Phe Val Ser Lys Ser Leu Ala Glu Lys Ala Ala Met Glu
                165                 170                 175

Tyr Ala Ser Glu Asn Gly Leu Asp Phe Ile Ser Ile Ile Pro Thr Leu
            180                 185                 190

Val Val Gly Pro Phe Leu Ser Ala Gly Met Pro Pro Ser Leu Val Thr
        195                 200                 205

Ala Leu Ala Leu Ile Thr Gly Asn Glu Ala His Tyr Ser Ile Leu Lys
    210                 215                 220

Gln Val Gln Leu Val His Leu Asp Asp Leu Cys Asp Ala Met Thr Phe
225                 230                 235                 240

Leu Phe Glu His Pro Glu Ala Asn Gly Arg Tyr Ile Cys Ser Ser His
                245                 250                 255

Asp Ala Thr Ile His Gly Leu Ala Arg Met Leu Arg Asp Arg Phe Pro
            260                 265                 270

Glu Tyr Ser Ile Pro Gln Lys Phe Ala Gly Val Asp Asp Asp Leu Gln
        275                 280                 285

Pro Ile His Phe Ser Ser Lys Lys Leu Leu Asp His Gly Phe Ser Phe
    290                 295                 300

Arg Tyr Thr Ala Glu Asp Met Phe Asp Ala Ala Ile Arg Thr Cys Arg
305                 310                 315                 320

Glu Lys Gly Leu Ile Pro Leu Gly Asp Ala Pro Pro Pro Ala Ala Gly
                325                 330                 335

Gly Lys Leu Gly Ala Leu Ala Ala Gly Glu Gly Gln Ala Ile Gly Ala
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Glu Thr

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<212> DNA
<213> Triticum aestivum

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<211> 329
<212> PRT
<213> Triticum aestivum

<400> 14
Met Ala Asn Thr Ser Lys Gly Lys Val Cys Val Thr Gly Ala Ser Gly
1 5 10 15

Phe Val Ala Ser Trp Leu Val Lys Arg Leu Leu Glu Ser Gly Tyr His
20 25 30

Val Leu Gly Thr Val Arg Asp Pro Gly Asn Gln Lys Lys Val Ala His
35 40 45

Leu Trp Asn Leu Ala Gly Ala Lys Glu Gly Leu Glu Leu Val Arg Ala
50 55 60

Asp Leu Leu Glu Glu Gly Ser Phe Asp Asp Ala Val Met Ala Cys Glu
65 70 75 80

Gly Val Phe His Thr Ala Ser Pro Ile Ile Thr Asn Ala Asp Ser Lys
85 90 95

Glu Glu Met Leu Asp Ser Ala Ile Asn Gly Thr Leu Asn Val Leu Arg
100 105 110

Ser Cys Lys Lys Asn Pro Phe Leu Lys Arg Val Val Leu Thr Ser Ser
115 120 125

Ser Ser Thr Met Arg Leu Arg Asp Glu Ala Glu Phe Pro Pro Asn Val
130 135 140

Leu Leu Asp Glu Thr Ser Trp Ser Ser Val Glu Phe Cys Glu Ser Ile
145 150 155 160

Gln Ile Trp Tyr Ala Val Ala Lys Ile Leu Ala Glu Lys Ser Ala Trp
165 170 175

Glu Phe Ala Lys Glu Asn Asn Ile Asp Leu Val Ala Val Leu Pro Thr
180 185 190

Phe Ile Ile Gly Pro Asn Leu Ser Pro Val Leu Gly Pro Thr Ala Ser
195 200 205

Asp Val Leu Gly Leu Phe Lys Gly Glu Thr Glu Lys Phe Thr Ile Phe
210 215 220

Gly Arg Met Gly Tyr Val His Ile Asp Asp Val Ala Ser Cys His Ile
225 230 235 240

Leu Val Tyr Glu Thr Ala Asp Ala Lys Gly Arg Tyr Ile Cys Asn Ser
245 250 255

Ala Val Leu Asp Ser Asn Glu Leu Val Ala Leu Leu Ala Lys Arg Phe
260 265 270

Pro Ser Phe Pro Ile Pro Lys Ser Leu Pro Asn Ile Tyr Gly Glu Gln
275 280 285

Thr Tyr Gly Tyr Asn Thr Ser Lys Ile Arg Lys Leu Gly Leu Glu Phe
290 295 300

Arg Gly Val Glu Glu Met Phe Asp Asp Ser Val Glu Ser Leu Lys Ala
305 310 315 320

His Gly Tyr Leu Arg Glu Gly Ala Ala
325

<210> 15
<211> 1350
<212> DNA
<213> Triticum aestivum

<400> 15
gcacgagagc cattgaaaga aagctcaaga aggaagtcga tagagagatg aagggagaga 60
caatggacgg gagcaaaggg ccggtggtgg tgactggagc gtcgggtttc gtagggtcgt 120
ggctcgtcat gaagctcctc caggccgggt acaccgtccg ggccaccgtg cgcgacccgg 180
ccaacgttga gaagaacaag ccgttgctgg agcttcccgg agccaaggag cggctgtcca 240
tctggaaggc cgacctgagc gacgaaggca gcttcgacga cgccatcgcc ggctgcaccg 300
gcgtcttcca cgtcgccacg cccatggact tcgactccaa agatcccgag aacgaggtga 360
tcaaacccac ggtggaaggg atgctgagca tcatgagggc ctgcaaggag gctggcaccg 420
tgaagcgcat cgtcttcacc tcctccgccg gcagcgtcaa catcgaggag cggcagcggc 480
cagcctacga ccaggacaac tggagcgaca tcgacttctg ccgccgcgtc aagatgacag 540
gatggatgta cttcgtgtcc aagtccctcg cagagaaggc cgccatggag tacgccagcg 600

agaacggcct ggacttcatc agcatcatcc ccacgctcgt agtcggcccg ttcctcagcg 660
ccggcatgcc gcccagcctc gtcaccgccc tggcgctcat cacagggaat gaagcccact 720
actcgatcct gaagcaggtg cagctggtgc acctggacga cctctgcgac gccatgacct 780
tcctcttcga gcacccggag gccaacggcc gctacatctg ctcctcccac gacgccacca 840
tccacggcct cgccaggatg ctccgggaca ggttccccga gtacagcatc ccgcacaagt 900
tcgcaggcgt cgacgacgac ctccagccca tccacttctc ctccaagaag ctcctcgacc 960
acggcttcag cttccggtac accgccgagg acatgtttga cgctgccatc cgcacctgca 1020
gggagaaggg cctcattccg ctcggagacg ccccggcgcc tgcagctgcc ggcaagctgg 1080
gagctcttgc tgcgggcaaa ggccaagcca ttggtgccga gacataataa gccagcgctg 1140
ctgcatgaat actattcttg tgttcggaat ttgcatgggc agagccctgt aactagtggg 1200
atatcatgga ctatggagtg catcaaattt ttttcacctc ggcagtagta tgaaataaaa 1260
ttgaaaataa cgcataaact ttatcagtat taaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1320
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1350

<210> 16
<211> 354
<212> PRT
<213> Triticum aestivum

<400> 16

Met	Asp	Gly	Ser	Lys	Gly	Pro	Val	Val	Val	Thr	Gly	Ala	Ser	Gly	Phe
1				5					10					15	
Val	Gly	Ser	Trp	Leu	Val	Met	Lys	Leu	Leu	Gln	Ala	Gly	Tyr	Thr	Val
			20					25					30		
Arg	Ala	Thr	Val	Arg	Asp	Pro	Ala	Asn	Val	Glu	Lys	Asn	Lys	Pro	Leu
		35					40					45			
Leu	Glu	Leu	Pro	Gly	Ala	Lys	Glu	Arg	Leu	Ser	Ile	Trp	Lys	Ala	Asp
	50					55					60				
Leu	Ser	Asp	Glu	Gly	Ser	Phe	Asp	Asp	Ala	Ile	Ala	Gly	Cys	Thr	Gly
65					70					75					80
Val	Phe	His	Val	Ala	Thr	Pro	Met	Asp	Phe	Asp	Ser	Lys	Asp	Pro	Glu
				85					90					95	
Asn	Glu	Val	Ile	Lys	Pro	Thr	Val	Glu	Gly	Met	Leu	Ser	Ile	Met	Arg
			100					105					110		
Ala	Cys	Lys	Glu	Ala	Gly	Thr	Val	Lys	Arg	Ile	Val	Phe	Thr	Ser	Ser
		115					120					125			
Ala	Gly	Ser	Val	Asn	Ile	Glu	Glu	Arg	Gln	Arg	Pro	Ala	Tyr	Asp	Gln
	130					135					140				
Asp	Asn	Trp	Ser	Asp	Ile	Asp	Phe	Cys	Arg	Arg	Val	Lys	Met	Thr	Gly
145					150					155					160
Trp	Met	Tyr	Phe	Val	Ser	Lys	Ser	Leu	Ala	Glu	Lys	Ala	Ala	Met	Glu
				165					170					175	
Tyr	Ala	Ser	Glu	Asn	Gly	Leu	Asp	Phe	Ile	Ser	Ile	Ile	Pro	Thr	Leu
			180					185					190		
Val	Val	Gly	Pro	Phe	Leu	Ser	Ala	Gly	Met	Pro	Pro	Ser	Leu	Val	Thr
		195					200					205			

Ala Leu Ala Leu Ile Thr Gly Asn Glu Ala His Tyr Ser Ile Leu Lys
210 215 220

Gln Val Gln Leu Val His Leu Asp Asp Leu Cys Asp Ala Met Thr Phe
225 230 235 240

Leu Phe Glu His Pro Glu Ala Asn Gly Arg Tyr Ile Cys Ser Ser His
245 250 255

Asp Ala Thr Ile His Gly Leu Ala Arg Met Leu Arg Asp Arg Phe Pro
260 265 270

Glu Tyr Ser Ile Pro His Lys Phe Ala Gly Val Asp Asp Asp Leu Gln
275 280 285

Pro Ile His Phe Ser Ser Lys Lys Leu Leu Asp His Gly Phe Ser Phe
290 295 300

Arg Tyr Thr Ala Glu Asp Met Phe Asp Ala Ala Ile Arg Thr Cys Arg
305 310 315 320

Glu Lys Gly Leu Ile Pro Leu Gly Asp Ala Pro Ala Pro Ala Ala Ala
325 330 335

Gly Lys Leu Gly Ala Leu Ala Ala Gly Lys Gly Gln Ala Ile Gly Ala
340 345 350

Glu Thr

<210> 17
<211> 347
<212> PRT
<213> Glycine max

<400> 17
Met Gly Ser Ala Ser Glu Ser Val Cys Val Thr Gly Ala Ser Gly Phe
1 5 10 15

Ile Gly Ser Trp Leu Val Met Arg Leu Ile Glu Arg Gly Tyr Thr Val
20 25 30

Arg Ala Thr Val Arg Asp Pro Val Asn Met Lys Lys Val Lys His Leu
35 40 45

Val Glu Leu Pro Gly Ala Lys Ser Lys Leu Ser Leu Trp Lys Ala Asp
50 55 60

Leu Ala Glu Glu Gly Ser Phe Asp Glu Ala Ile Lys Gly Cys Thr Gly
65 70 75 80

Val Phe His Val Ala Thr Pro Met Asp Phe Glu Ser Lys Asp Pro Glu
85 90 95

Asn Glu Val Ile Lys Pro Thr Ile Asn Gly Val Leu Asp Ile Met Lys
100 105 110

Ala Cys Leu Lys Ala Lys Thr Val Arg Arg Leu Ile Phe Thr Ser Ser
115 120 125

```
Ala Gly Thr Leu Asn Val Ile Glu Arg Gln Lys Pro Val Phe Asp Asp
    130                 135                 140

Thr Cys Trp Ser Asp Val Glu Phe Cys Arg Arg Val Lys Met Thr Gly
145                 150                 155                 160

Trp Met Tyr Phe Val Ser Lys Thr Leu Ala Glu Lys Glu Ala Trp Lys
                165                 170                 175

Phe Ala Lys Glu Gln Gly Leu Asp Phe Ile Thr Ile Ile Pro Pro Leu
            180                 185                 190

Val Val Gly Pro Phe Leu Met Pro Thr Met Pro Pro Ser Leu Ile Thr
        195                 200                 205

Ala Leu Ser Pro Ile Thr Gly Asn Glu Asp His Tyr Ser Ile Ile Lys
    210                 215                 220

Gln Gly Gln Phe Val His Leu Asp Asp Leu Cys Leu Ala His Ile Phe
225                 230                 235                 240

Leu Phe Glu Glu Pro Glu Val Glu Gly Arg Tyr Ile Cys Ser Ala Cys
                245                 250                 255

Asp Ala Thr Ile His Asp Ile Ala Lys Leu Ile Asn Gln Lys Tyr Pro
            260                 265                 270

Glu Tyr Lys Val Pro Thr Lys Phe Lys Asn Ile Pro Asp Gln Leu Glu
        275                 280                 285

Leu Val Arg Phe Ser Ser Lys Lys Ile Thr Asp Leu Gly Phe Lys Phe
    290                 295                 300

Lys Tyr Ser Leu Glu Asp Met Tyr Thr Gly Ala Ile Asp Thr Cys Arg
305                 310                 315                 320

Asp Lys Gly Leu Leu Pro Lys Pro Ala Glu Lys Gly Leu Phe Thr Lys
                325                 330                 335

Pro Gly Glu Thr Pro Val Asn Ala Met His Lys
            340                 345
```

<210> 18
<211> 342
<212> PRT
<213> Arabidopsis thaliana

<400> 18

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Met Asp Gln Thr Leu Thr His Thr Gly Ser Lys Lys Ala Cys Val Ile
  1               5                  10                  15

Gly Gly Thr Gly Asn Leu Ala Ser Ile Leu Ile Lys His Leu Leu Gln
             20                  25                  30

Ser Gly Tyr Lys Val Asn Thr Thr Val Arg Asp Pro Glu Asn Glu Lys
         35                  40                  45

Lys Ile Ala His Leu Arg Gln Leu Gln Glu Leu Gly Asp Leu Lys Ile
```

```
     50                  55                  60

Phe Lys Ala Asp Leu Thr Asp Glu Asp Ser Phe Glu Ser Ser Phe Ser
 65                  70                  75                  80

Gly Cys Glu Tyr Ile Phe His Val Ala Thr Pro Ile Asn Phe Lys Ser
                 85                  90                  95

Glu Asp Pro Glu Lys Asp Met Ile Lys Pro Ala Ile Gln Gly Val Ile
            100                 105                 110

Asn Val Leu Lys Ser Cys Leu Lys Ser Lys Ser Val Lys Arg Val Ile
        115                 120                 125

Tyr Thr Ser Ser Ala Ala Ala Val Ser Ile Asn Asn Leu Ser Gly Thr
    130                 135                 140

Gly Leu Val Met Asn Glu Glu Asn Trp Thr Asp Ile Asp Phe Leu Thr
145                 150                 155                 160

Glu Glu Lys Pro Phe Asn Trp Gly Tyr Pro Ile Ser Lys Val Leu Ala
                165                 170                 175

Glu Lys Lys Ala Trp Glu Phe Ala Glu Glu Asn Lys Ile Asn Leu Val
            180                 185                 190

Thr Val Ile Pro Ala Leu Ile Ala Gly Asn Ser Leu Leu Ser Asp Pro
        195                 200                 205

Pro Ser Ser Leu Ser Leu Ser Met Ser Phe Ile Thr Gly Lys Glu Met
    210                 215                 220

His Val Thr Gly Leu Lys Glu Met Gln Lys Leu Ser Gly Ser Ile Ser
225                 230                 235                 240

Phe Val His Val Asp Asp Leu Ala Arg Ala His Leu Phe Leu Ala Glu
                245                 250                 255

Lys Glu Thr Ala Ser Gly Arg Tyr Ile Cys Cys Ala Tyr Asn Thr Ser
            260                 265                 270

Val Pro Glu Ile Ala Asp Phe Leu Ile Gln Arg Tyr Pro Lys Tyr Asn
        275                 280                 285

Val Leu Ser Glu Phe Glu Glu Gly Leu Ser Ile Pro Lys Leu Thr Leu
    290                 295                 300

Ser Ser Gln Lys Leu Ile Asn Glu Gly Phe Arg Phe Glu Tyr Gly Ile
305                 310                 315                 320

Asn Glu Met Tyr Asp Gln Met Ile Glu Tyr Phe Glu Ser Lys Gly Leu
                325                 330                 335

Ile Lys Ala Lys Glu Ser
            340
```

<210> 19
<211> 354
<212> PRT

<213> Hordeum vulgare

<400> 19

```
Met Asp Gly Asn Lys Gly Pro Val Val Val Thr Gly Ala Ser Gly Phe
 1               5                  10                  15

Val Gly Ser Trp Leu Val Met Lys Leu Leu Gln Ala Gly Tyr Thr Val
            20                  25                  30

Arg Ala Thr Val Arg Asp Pro Ala Asn Val Glu Lys Thr Lys Pro Leu
        35                  40                  45

Leu Glu Leu Pro Gly Ala Lys Glu Arg Leu Ser Ile Trp Lys Ala Asp
    50                  55                  60

Leu Ser Glu Asp Gly Ser Phe Asn Glu Ala Ile Ala Gly Cys Thr Gly
65                  70                  75                  80

Val Phe His Val Ala Thr Pro Met Asp Phe Asp Ser Gln Asp Pro Glu
                85                  90                  95

Asn Glu Val Ile Lys Pro Thr Val Glu Gly Met Leu Ser Ile Met Arg
            100                 105                 110

Ala Cys Lys Glu Ala Gly Thr Val Lys Arg Ile Val Phe Thr Ser Ser
        115                 120                 125

Ala Gly Ser Val Asn Ile Glu Glu Arg Pro Arg Pro Ala Tyr Asp Gln
    130                 135                 140

Asp Asn Trp Ser Asp Ile Asp Tyr Cys Arg Arg Val Lys Met Thr Gly
145                 150                 155                 160

Trp Met Tyr Phe Val Ser Lys Ala Leu Ala Glu Lys Ala Ala Met Glu
                165                 170                 175

Tyr Ala Ser Glu Asn Gly Leu Asp Phe Ile Ser Ile Ile Pro Thr Leu
            180                 185                 190

Val Val Gly Pro Phe Leu Ser Ala Gly Met Pro Pro Ser Leu Val Thr
        195                 200                 205

Ala Leu Ala Leu Ile Thr Gly Asn Glu Ala His Tyr Ser Ile Leu Lys
    210                 215                 220

Gln Val Gln Leu Val His Leu Asp Asp Leu Cys Asp Ala Met Thr Phe
225                 230                 235                 240

Leu Phe Glu His Pro Glu Ala Asn Gly Arg Tyr Ile Cys Ser Ser His
                245                 250                 255

Asp Ala Thr Ile His Gly Leu Ala Arg Met Leu Gln Asp Arg Phe Pro
            260                 265                 270

Glu Tyr Asp Ile Pro Gln Lys Phe Ala Gly Val Asp Asp Asn Leu Gln
        275                 280                 285

Pro Ile His Phe Ser Ser Lys Lys Leu Leu Asp His Gly Phe Ser Phe
    290                 295                 300
```

Arg Tyr Thr Thr Glu Asp Met Phe Asp Ala Ala Ile His Thr Cys Arg
305 310 315 320

Asp Lys Gly Leu Ile Pro Leu Gly Asp Val Pro Ala Pro Ala Ala Gly
325 330 335

Gly Lys Leu Gly Ala Leu Ala Ala Gly Glu Gly Gln Ala Ile Gly Ala
340 345 350

Glu Thr

<210> 20
<211> 330
<212> PRT
<213> Oryza sativa

<400> 20
Met Val Ile Ser Ser Lys Gly Lys Val Cys Val Thr Gly Ala Ser Gly
1 5 10 15

Phe Val Ala Ser Trp Leu Ile Lys Arg Leu Leu Glu Ala Gly Tyr His
20 25 30

Val Ile Gly Thr Val Arg Asp Pro Ser Asn Arg Glu Lys Val Ser His
35 40 45

Leu Trp Arg Leu Pro Ser Ala Lys Glu Arg Leu Gln Leu Val Arg Ala
50 55 60

Asp Leu Met Glu Glu Gly Ser Phe Asp Asp Ala Val Met Ala Cys Glu
65 70 75 80

Gly Val Phe His Thr Ala Ser Pro Val Leu Ala Lys Ser Asp Ser Asn
85 90 95

Cys Lys Glu Glu Met Leu Val Pro Ala Ile Asn Gly Thr Leu Asn Val
100 105 110

Leu Lys Ser Cys Lys Lys Asn Pro Phe Leu Lys Arg Val Val Leu Thr
115 120 125

Ser Ser Ser Ser Thr Val Arg Ile Met Asp Glu Ser Lys His Pro Glu
130 135 140

Ile Ser Leu Asp Glu Thr Ile Trp Ser Ser Val Ala Leu Cys Glu Lys
145 150 155 160

Leu Gln Leu Trp Tyr Ala Leu Ala Lys Ile Ser Ala Glu Lys Ala Ala
165 170 175

Trp Glu Phe Ala Lys Glu Asn Asn Ile Asp Leu Val Thr Val Leu Pro
180 185 190

Ser Phe Val Ile Gly Pro Ser Leu Ser His Glu Leu Ser Val Thr Ala
195 200 205

Ser Asp Ile Leu Gly Leu Leu Gln Gly Asp Thr Asp Arg Phe Ile Ser
210 215 220

```
Tyr Gly Arg Met Gly Tyr Val His Ile Asp Asp Val Ala Ser Cys His
225                 230                 235                 240

Ile Leu Val Tyr Glu Ala Pro Gln Ala Thr Gly Arg Tyr Leu Cys Asn
                245                 250                 255

Ser Val Val Leu Asp Asn Asn Glu Leu Val Ala Leu Leu Ala Lys Gln
            260                 265                 270

Phe Pro Ile Phe Pro Ile Pro Arg Ser Leu Arg Asn Pro Tyr Glu Lys
        275                 280                 285

Gln Ser Tyr Glu Leu Asn Thr Ser Lys Ile Gln Gln Leu Gly Phe Lys
    290                 295                 300

Phe Lys Gly Val Gln Glu Met Phe Gly Asp Cys Val Glu Ser Leu Lys
305                 310                 315                 320

Asp Gln Gly His Leu Leu Glu Cys Pro Leu
                325                 330
```

<210> 21
<211> 341
<212> PRT
<213> Fragaria x ananassa

```
<400> 21
Met Gly Leu Gly Ala Glu Ser Gly Ser Val Cys Val Thr Gly Ala Ser
  1               5                  10                  15

Gly Phe Val Gly Ser Trp Leu Val Met Arg Leu Leu Glu His Gly Tyr
             20                  25                  30

Thr Val Arg Ala Thr Val Arg Asp Pro Ala Asn Leu Lys Lys Val Arg
         35                  40                  45

His Leu Leu Glu Leu Pro Gln Ala Ala Thr Arg Leu Thr Leu Trp Lys
     50                  55                  60

Ala Asp Leu Asp Val Glu Gly Ser Phe Asp Glu Ala Ile Lys Gly Cys
 65                  70                  75                  80

Thr Gly Val Phe His Val Ala Thr Pro Met Asp Phe Glu Ser Glu Asp
                85                  90                  95

Pro Glu Asn Glu Val Ile Lys Pro Thr Ile Asn Gly Met Leu Asp Ile
            100                 105                 110

Met Lys Ala Cys Leu Lys Ala Lys Thr Val Arg Arg Leu Val Phe Thr
        115                 120                 125

Ser Ser Ala Gly Ala Val Ala Ile Glu Glu His Pro Lys Glu Val Tyr
    130                 135                 140

Ser Glu Asn Asn Trp Ser Asp Val Val Phe Cys Arg Lys Val Lys Met
145                 150                 155                 160
```

```
Thr Gly Trp Met Tyr Phe Val Ser Lys Thr Leu Ala Glu Gln Ala Ala
                165                 170                 175

Trp Lys Phe Ala Lys Glu Asn Asn Ile Asp Phe Ile Thr Ile Ile Pro
            180                 185                 190

Thr Leu Val Ile Gly Pro Phe Leu Ala Pro Ser Met Pro Pro Ser Leu
        195                 200                 205

Ile Ser Gly Leu Ser Pro Leu Thr Gly Asn Glu Ala His Tyr Gly Ile
    210                 215                 220

Ile Lys Gln Cys Gln Tyr Val His Leu Asp Asp Leu Cys Gln Ser His
225                 230                 235                 240

Ile Phe Leu Tyr Glu His Ala Lys Ala Glu Gly Arg Tyr Ile Cys Ser
                245                 250                 255

Ser His Asp Ala Thr Ile His Asp Ile Ala Lys Leu Leu Asn Glu Lys
            260                 265                 270

Tyr Pro Lys Tyr Asn Val Pro Lys Lys Phe Lys Gly Ile Glu Glu Asn
        275                 280                 285

Leu Thr Asn Ile His Phe Ser Ser Lys Lys Leu Lys Glu Met Gly Phe
    290                 295                 300

Glu Phe Lys His Ser Leu Glu Asp Met Phe Thr Gly Ala Val Asp Ala
305                 310                 315                 320

Cys Arg Glu Lys Gly Leu Leu Pro Leu Pro Gln Glu Glu Glu Thr Glu
                325                 330                 335

Lys Arg Arg Ala Gly
            340
```

<210> 22
<211> 331
<212> PRT
<213> Zea mays

<400> 22

```
Met Val Thr Ser Ser Lys Gly Lys Val Cys Val Thr Gly Ala Ser Gly
  1               5                  10                  15

Phe Val Ala Ser Trp Leu Ile Lys Arg Leu Leu Glu Ser Gly Tyr His
             20                  25                  30

Val Val Gly Thr Val Arg Asp Pro Gly Asn His Gln Lys Thr Ala His
         35                  40                  45

Leu Trp Lys Leu Pro Gly Ala Lys Glu Arg Leu Gln Ile Val Arg Ala
     50                  55                  60

Asn Leu Leu Glu Glu Gly Ser Phe Asp Ser Ala Val Met Ala Cys Glu
 65                  70                  75                  80

Gly Val Phe His Thr Ala Ser Pro Val Leu Ala Lys Pro Asp Ser Thr
```

85 90 95

Ser Lys Glu Asp Thr Leu Val Pro Ala Val Asn Gly Thr Leu Asn Val
100 105 110

Leu Arg Ser Cys Lys Lys Asn Pro Phe Leu Lys Arg Val Val Leu Thr
115 120 125

Ser Ser Ser Ser Ala Val Arg Ile Arg Asp Asp Gly Gly Gln Ser Ser
130 135 140

Asn Ile Ser Leu Asp Glu Thr Thr Trp Ser Ser Val Pro Leu Cys Glu
145 150 155 160

Lys Met His Leu Trp Tyr Ala Leu Ala Lys Val Phe Ala Glu Lys Ala
165 170 175

Ala Trp Glu Phe Ala Lys Glu Asn Gly Ile Asp Leu Val Thr Val Leu
180 185 190

Pro Ser Phe Val Ile Gly Pro Ser Leu Ser His Glu Leu Cys Val Thr
195 200 205

Ala Ser Asp Val Leu Gly Leu Phe Gln Gly Asp Thr Ala Arg Phe Ser
210 215 220

Ser Tyr Gly Arg Met Gly Tyr Val His Ile Asp Asp Val Ala Ser Ser
225 230 235 240

His Ile Leu Val Tyr Glu Val Pro Gln Ala Ala Gly Arg Tyr Leu Cys
245 250 255

Ser Ser Val Val Leu Asp Asn Asp Glu Leu Val Ser Ser Leu Ala Lys
260 265 270

Arg Tyr Pro Ile Phe Pro Ile Pro Arg Arg Leu Asn Ser Pro Tyr Gly
275 280 285

Lys Gln Ser Tyr Gln Leu Asn Thr Ser Lys Leu Gln Gly Leu Gly Phe
290 295 300

Lys Phe Arg Gly Val Gln Glu Met Phe Asp Asp Cys Val Gln Ser Leu
305 310 315 320

Lys Asp Gln Gly His Leu Leu Glu Cys Pro Leu
325 330